



**Corporation of London.**

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**PUBLIC HEALTH DEPARTMENT.**

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**REPORT,**

**SANITARY COMMITTEE,**

**RELATIVE TO THE QUESTION OF**

**HUMANE SLAUGHTERING OF  
ANIMALS.**

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*Ordered to be printed and circulated 2nd April, 1925.*



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**B O W E R, Mayor.**

**A Common Council holden in the Chamber of  
the Guildhall of the City of London, on  
Thursday, the 2nd day of April, 1925.**

Report—Sanitary Committee,  
(Mr. William Leuw.)

1925,  
24 March.

On the Reference of the 20th September, 1923, relative to the Petition of the Council of Justice to Animals, praying the Corporation to pass Clause 9 (B) of the Ministry of Health's Model Bye-laws relating to Slaughterhouses; submitting a Joint Report of the Medical Officer of Health (Dr. W. J. Howarth, C.B.E.), the Superintendent of the Metropolitan Cattle Market (Mr. J. R. Hayhurst) and the Veterinary Surgeon at the Central Meat Market (Mr. T. Dunlop Young) on the question of the humane slaughtering of animals, and stating that, having heard the views of the Petitioners, and of the Union of London Retail Meat Traders' Association Incorporated, and having considered the effect which the adoption of the Model Bye-law would have on the work at Islington Cattle Market, they are of opinion, in which the Cattle Markets Committee concur, that the time is now opportune for definite regulations to be framed to control and regulate the slaughtering of animals intended for human consumption; that any additional powers in this connection should be of general application throughout the country, and that in order to secure uniformity such regulations should be issued as compulsory regulations framed by the Ministry of Health; and recommending:—

(1) That the necessary steps be taken to urge upon the Ministry of Health the desirability of making such regulations; and

(2) That the Report of the Committee be printed and circulated amongst the Members of the Court.

Read, agreed to, and Ordered accordingly.

**B E L L.**



*To the Right Honourable the Lord Mayor, Aldermen and Commons  
of the City of London, in Common Council assembled.*

# REPORT—SANITARY COMMITTEE.

1925,  
24 March.

WE beg to report that we have had under consideration the Petition of the Council of Justice to Animals, praying the Corporation to pass Clause 9 (B) of the Ministry of Health's Model Bye-laws relating to slaughterhouses, which was referred, on the 20th September, 1923, to this Committee and the Cattle Markets Committee for examination and report.

As your Honourable Court is doubtless aware, Bye-laws for regulating the conduct of the business of a slaughterer of cattle, and the structure of the premises on which such business is being carried on in the City of London, were made by the Corporation on the 30th March, 1911, and allowed by the Local Government Board on the 13th May, 1911. Under these Bye-laws, any bull, ox, cow, heifer or calf must be effectually stunned before being slaughtered, except in the case of animals slaughtered according to the Jewish method (*vide* Clause 22), and, further, in Clause 23, it is provided that such method of slaughtering shall be adopted, and such precautions taken as may be requisite to secure the infliction of as little pain or suffering as practicable. Bye-laws in almost comparable terms, except that pigs are included, are operative in the Public Slaughterhouses at the Metropolitan Cattle Market at Islington.

The Model Bye-law 9 (B) of the Ministry of Health is as follows:—

“ A person shall not in a slaughterhouse proceed to slaughter any animal until the same shall have been effectually stunned, and such stunning shall, except as hereinafter provided, be effected with a mechanically operated instrument suitable and sufficient for the purpose.

“ Provided that this Bye-law, so far as it would require the stunning of sheep and the use of a mechanically operated instrument, shall not apply until the expiration of three months from and after the date of the confirmation of these Bye-laws.

“ Provided further that this Bye-law shall not be deemed to apply to any member of the Jewish Faith, duly licensed by the Chief Rabbi as a slaughterer, when engaged in the slaughtering of cattle intended for the food of Jews according to the Jewish method of slaughtering, if no unnecessary suffering is inflicted.”

The essential factor of this Model Bye-law is the compulsory use of a mechanically operated instrument for the purpose of stunning all animals before slaughter, and it will be observed that, as in the case of the Bye-laws of the Corporation, the Jewish method of slaughtering is not interfered with.

The stunning of animals by a hand-operated instrument is open to criticism from the point of view that its success depends entirely on the skill of the operator, and in the case of larger animals it does sometimes happen, even with a skilled operator, that more than one blow is required to produce unconsciousness. Careful observations have been made and records kept on this point, and the results are given in detail in a Joint Report presented by Dr. W. J. Howarth, C.B.E., your Medical Officer of Health, Mr. J. R. Hayhurst, Superintendent and Chief Veterinary Inspector of the Metropolitan Cattle Market, and Mr. T. Dunlop Young, Veterinary Surgeon at the Central Meat Market, to which we shall refer later.

We have thought it advisable at the outset to refer to, and compare, the Corporation's existing Bye-laws and the Model Bye-laws which your Honourable Court is asked to adopt, so that the essential feature of the latter Bye-law, viz., the compulsory use of a mechanical instrument for the stunning of all animals, may be made quite clear, and we now propose to detail the action we have taken on our Reference.

On the 22nd October, 1923, we conferred with the Cattle Markets Committee, and were attended by the Mover of the Reference, Alderman Sir G. Rowland Blades, and a Deputation from the Petitioners, whom we heard at considerable length. With



the concurrence of the Cattle Markets Committee, the Medical Officer of Health, Mr. J. R. Hayhurst and Mr. T. Dunlop Young were instructed to make such enquiries as they deemed expedient regarding the use of humane killers, and to report their views as to the suitability and efficiency of such instruments, and whether their use has any deleterious effect on the flesh of animals.

A Joint Report was subsequently presented by these Officers (a copy of which we append). This Report deals exhaustively with the various phases of the subject, and in conclusion your Officers made the following recommendations:—

1. That Bye-law 9 (B) be adopted by the Corporation, and that it should apply to:—

(a) Cattle, including calves;

(b) Horses;

(c) Pigs, the flesh of which is to be consumed as fresh pork.

2. SHEEP.—We are unable to agree as to a recommendation in the case of sheep, and submit a rider herewith.

3. We recommend that further enquiries and experiment be made in respect of the objections which others have submitted to the effect that the use of the mechanical apparatus prejudicially affects the preparation of bacon, if additional information is desired on this subject. We estimate that the cost of such enquiry would not exceed £150.

4. If Bye-law 9 (B) is adopted, we recommend that the use of a mechanically operated instrument of the captive-bolt type be specified, to the exclusion of one releasing a bullet.

5. If Bye-law 9 (B) is made compulsory, we consider that classes of instruction should be established for the purpose of educating slaughtermen in (a) simple anatomy of the skull of different animals, and (b) in the proper use and care of the instrument.

6. If it be practicable, after Bye-law 9 (B) is adopted, we would suggest that no persons should be permitted to slaughter in any slaughterhouse within the jurisdiction of the City Corporation until certified by one of your officials as having a competent knowledge of (a) and (b) above.

The rider mentioned in Recommendation No. 2 is as follows:—

*By the Superintendent of the Cattle Market and the Veterinary Surgeon.*

We consider—

(a) That there is practically no difference between the Jewish and the non-Jewish method of slaughtering sheep, from a humane point of view;

and

(b) That the difficulties attending the catching, holding effectually to shoot, and general handling of sheep in the use of a mechanically operated instrument by one man, associated with the fact that the rapid cut of the large blood vessels in the present method of slaughter causes an instantaneous unconsciousness as the entry of the bolt into the brain.

We recommend that “sheep” should be excluded from Bye-law 9 (B).

*By the Medical Officer of Health.*

I cannot accept the contention that the slight disadvantage to the trade which would result from the use of the mechanical killer is a sufficient reason to justify the slaughtering of sheep to be performed without preliminary stunning. The suggestion appears to be inconsistent with other of the recommendations, and I therefore submit:—

SHEEP.—That Model Bye-law 9 (B) be made operative in respect of the slaughter of sheep.

Copies of this Report were furnished to the Members of both Committees, and we conferred thereon with the Cattle Markets Committee on the 25th November, 1924, and on the 12th February last. On the latter occasion we were again attended by Alderman Sir G. Rowland Blades and a Deputation from the Council of Justice to



Animals; a Deputation from the Union of London Retail Meat Traders' Association Incorporated was also present, and both Deputations, who had been furnished with a copy of the Joint Report of your Officers, gave us their views thereon. We also invited a Deputation from the Smithfield and Aldgate Carcase Butchers' Association, Ltd., who, however, did not attend, but informed us by letter that they "have seriously considered the matter in all its bearings, and have no objections to raise to the adoption of the Mechanical Killer at Islington, and if the Corporation see fit to frame a Bye-law enforcing its use, the members of the Association will cordially fall in with it."

It was gathered from the views expressed that a divergence of opinion exists as to the advantages or disadvantages which result from the use of mechanically operated instruments, and, having carefully considered the whole question, it was decided to request the Medical Officer of Health to prepare a draft Resolution generally supporting the principles of the Ministry of Health's Model Bye-law 9 (B), and urging the Government, in order to secure uniformity, to make suitable Regulations applicable throughout the country.

A draft Resolution was accordingly prepared by the Medical Officer of Health, in the following terms, which was individually considered both by us and the Cattle Markets Committee:—

"That this Committee, having considered the Report of its Officers on the Humane Slaughtering of Animals, and having heard the views of duly appointed representatives of the Council of Justice to Animals and of the Union of London Retail Meat Traders' Association Incorporated thereon, and having considered the effect which the adoption of Model Bye-law 9 (B) would have on the work at Islington Cattle Market, is of opinion that the time is now opportune for definite Regulations to be framed to control and regulate the slaughtering of animals intended for human consumption, and, furthermore, is of opinion that any additional powers in this connection should be of general application throughout the country, and that in order to secure uniformity, it respectfully submits that such Regulations should be issued as compulsory Regulations framed by the Ministry of Health."

We subsequently received the following expressions of opinion from the Cattle Markets Committee:—

RESOLVED—That this Committee are of opinion that any Statutory Regulation dealing with the question should exclude sheep.

RESOLVED—That, having studied the exhaustive Report of the Officers, and heard the Deputations from the Petitioners and the Union of London Retail Meat Traders' Association Incorporated, this Committee approve the use of a mechanically operated instrument—preferably of the captive-bolt type—for the slaughter of cattle, calves, pigs and horses at the Metropolitan Cattle Market.

The Committee are not, however, satisfied that the slaughter of sheep on a crutch by such an instrument, or any form of stunning, would be more humane than the present methods of sticking or cutting, and are not, therefore, in view of the probable adverse effect on the trade of the Market and Abattoir at Islington, prepared to recommend the adoption by the Court of Model Bye-law 9 (B) of the Ministry of Health.

The Committee are prepared to agree an amended Bye-law for the Metropolitan Cattle Market, on the lines of the Model Bye-law, not applicable to sheep; or, in the alternative, to recommend that the Ministry of Health be pressed to make a Statutory Regulation prescribing the method of slaughter of all animals in slaughterhouses throughout the country.

These we duly considered, and our decision was to adopt the draft Resolution above mentioned.



We, however, sought a further Conference with the Cattle Markets Committee on the subject, and have now received the following communication :—

*Wednesday, 18th March, 1925.*

#### CATTLE MARKETS COMMITTEE.

The Committee proceeded in the consideration of the adjourned Reference from the Court of Common Council on the Petition of the Council of Justice to Animals, relative to the use of a Humane Killer for the slaughter of animals.

A Resolution of the Sanitary Committee, agreeing to the draft Resolution submitted by the Medical Officer of Health in accordance with the instructions of the Joint Conference of the 12th February last and read in the Grand Committee on the 18th February last, and asking for a further Conference in the matter, was read :—

RESOLVED—That, in the circumstances, the Committee acquiesce in the Resolution of the Sanitary Committee, and, in their opinion, therefore, a further Conference is unnecessary; and, further, that it be recommended to the Sanitary Committee that the Report of that Committee to the Court of Common Council, when adopted, together with the Joint Report of the Officers as an appendix thereto, be printed and circulated, and that authority be sought for this purpose.

In view of the acquiescence of the Cattle Markets Committee in our action, we now beg to submit the Resolution jointly concurred in, viz. :—

“ That this Committee, having considered the Report of its Officers on  
 “ the Humane Slaughtering of Animals, and having heard the views of duly  
 “ appointed representatives of the Council of Justice to Animals and of the  
 “ Union of London Retail Meat Traders’ Association Incorporated thereon,  
 “ and having considered the effect which the adoption of Model Bye-law 9 (B)  
 “ would have on the work at Islington Cattle Market, is of opinion that the  
 “ time is now opportune for definite Regulations to be framed to control and  
 “ regulate the slaughtering of animals intended for human consumption, and,  
 “ furthermore, is of opinion that any additional powers in this connection should  
 “ be of general application throughout the country, and that in order to secure  
 “ uniformity, it respectfully submits that such Regulations should be issued as  
 “ compulsory Regulations framed by the Ministry of Health; ”

and to recommend that, in the event of your Honourable Court approving the same, the necessary steps be taken to urge upon the Ministry of Health the desirability of making compulsory Regulations for the purpose. We also beg to recommend that our Report be printed and circulated for the information of the Members of your Honourable Court.

All which we submit to the judgment of your Honourable Court. Dated this twenty-fourth day of March, 1925.

Signed on behalf of the Committee,

WILLIAM LEUW,  
*Chairman.*



To  
*The Worshipful the Sanitary Committee*  
*and*  
*The Worshipful the Cattle Markets Committee.*

30th September, 1924.

# THE HUMANE SLAUGHTER OF ANIMALS.

GENTLEMEN,

On September 20th, 1923, the Court of Common Council considered the following Petition, which was presented by Alderman Sir G. Rowland Blades, Bart., M.P. :—

“ 1st August, 1923.

The Humble Petition of  
 The Council of Justice to Animals,  
 42, Old Bond Street, W. 1,

Sheweth

That the above-mentioned Society urges that Clause 9 (B) of the Ministry of Health's Model Bye-laws relating to slaughterhouses be passed by the City Corporation, in order to save much totally unnecessary suffering, and also so that, since the London County Council have passed the Bye-law, the methods of slaughter shall be uniform throughout London. Ninety Boroughs have now passed this Bye-law.

Enclosed for inspection is a list of 623 medical consultants of London who signed a Petition last year to the London County Council urging the passing of Clause 9 (B). The list contains many of the most eminent names in the medical profession, including Dr. Spilsbury, Home Office Pathologist.

Your Petitioner, therefore, humbly prays that the Council will see its way to pass the said Clause 9 (B) of the Ministry of Health's Model Bye-laws.

And your Petitioner will ever pray.

(Signed) C. LIONEL HANINGTON,  
*Chairman.”*

(Signed) G. R. BLADES.

The Court of Common Council referred it to the Sanitary and Cattle Markets Committees to examine the allegations thereof, and to report their opinion thereon to the Court of Common Council.

At a later date a Joint Committee, comprised of Members of these two Committees, considered the Petition, and subsequently instructed the Medical Officer of Health, the Veterinary Surgeon and the Superintendent and Chief Veterinary Inspector of the Metropolitan Cattle Market to present a Joint Report on the subject. The following Report is prepared in accordance with the above instructions :—

## GENERAL INFORMATION.

Bye-law 9 (B), which is referred to in the above Petition, is in the following terms :—

“ 9 (B).—A person shall not in a slaughterhouse proceed to slaughter any animal until the same shall have been effectually stunned, and such stunning shall, except as hereinafter provided, be effected with a mechanically operated instrument suitable and sufficient for the purpose.

“ Provided that this Bye-law, so far as it would require the stunning of sheep and the use of a mechanically operated instrument, shall not apply until the expiration of three months from and after the date of the confirmation of these Bye-laws.

“ Provided, further, that this Bye-law shall not be deemed to apply to any member of the Jewish Faith, duly licensed by the Chief Rabbi as a slaughterer, when engaged in the slaughtering of cattle intended for the food of Jews according to the Jewish method of slaughtering, if no unnecessary suffering is inflicted.”

In the Memorandum which prefaces these Model Bye-laws the following observations are made :—

## “ PREVENTION OF CRUELTY.

“ It is hardly necessary to urge that all animals be slaughtered by the most painless and effective methods, but it may be desirable to point out that the prevention of cruelty in slaughterhouses by means of Bye-laws is one of the specific duties which has been imposed upon Local Authorities by the Legislature, and the Board have always attached much importance to the making and enforcement of Bye-laws for this purpose.



“ In view of the recommendations of the Committee appointed by the Admiralty to consider the Humane Slaughtering of Animals, three new Clauses, numbered 9 (now 9 (A)), 11 and 13, have, since the revision of 1909, been included in the Model Bye-laws with respect to slaughterhouses, in addition to the provisions for preventing cruelty which had previously been introduced.

“ Clause 9 was inserted in order to carry out the recommendation of the Committee, that ‘ all animals, without exception, must be stunned or otherwise rendered unconscious before blood is drawn.’

“ While, however, the Board concur in the principle of this recommendation, it must be remembered that attempts at stunning, carelessly or unskilfully made, may be the means of inflicting, instead of avoiding, unnecessary pain, and it appears that, in the case of sheep, stunning by an implement such as a club or a hammer is an operation in the carrying out of which cruelty may easily occur if the stunning is not properly performed. The Committee satisfied themselves that sheep can be stunned expeditiously and without difficulty by striking them on the top of the head between the ears—not on the forehead—with a small club having a heavy head; and they state that in Denmark, many parts of Germany, and Switzerland the law requires that sheep shall always be stunned previous to being stuck. But while the practice of stunning sheep by a blow aimed at the head may be a proper one to adopt in public abattoirs, where it will be carried out by skilled slaughtermen, the Board have hitherto doubted the expediency of requiring its adoption in private establishments, unless there is reasonable ground for believing that it will be properly performed.

“ The Board are now advised that the difficulty may satisfactorily be overcome by the use of an efficient mechanical appliance of the type popularly known as a ‘ humane killer.’ Since the issue of the Committee’s Report great improvements have been made in these instruments, and at the present time the Board understand that a ‘ humane killer ’ can be got which is adapted for stunning any kind of animal, reasonable in cost and effective and simple in operation. It appears, too, that the use of the improved instruments can readily be learnt, so that no prolonged training is needed for their proper manipulation.

“ The Board do not, at present, feel that the time is altogether ripe for framing their Model Bye-laws in such a way as to require the use of mechanical to the exclusion of all other stunning instruments, but, after full and careful consideration of representations made to them against, as well as in favour of, making compulsory the use of such appliances, they have now decided to include in the Model Series the Clause numbered 9 (B), as an alternative to the Clause 9 previously mentioned. If, therefore, a Local Authority, looking to the circumstances of their district, consider that such a requirement may reasonably be applied, they can adopt this alternative Clause, which, subject to the consideration of any objections which may be raised when the proposed Bye-law is deposited for public inspection, in pursuance of Section 184 of the Public Health Act, 1875, the Board will be prepared to confirm.

“ The Board have also thought it right, in view of representations which have been made to them by the Jewish authorities, to add a proviso permitting slaughtering by the Jewish method under proper conditions. This method is described in a Report by the late Sir Michael Foster, F.R.S., and Professor Starling, F.R.S., appended to the Report of the Admiralty Committee (Appendix J). The liability to the infliction of unnecessary suffering appears to occur especially in the preliminary throwing of the bullock and extension of the neck. The duration of consciousness to pain after the actual cutting of the throat, if skilfully performed, was estimated by Sir M. Foster as, in different instances, from something less than five seconds to something less than 40 seconds.”

It is desirable, perhaps, that the Bye-law referring to the same subject, and which is operative at the Metropolitan Cattle Market and the Public Slaughterhouses, Islington, should be quoted. It is in the following terms :—

“ 36. No person shall proceed to slaughter any bull, ox, cow, heifer, calf, or pig until the same shall have been effectually stunned; provided that this requirement shall not be deemed to apply to any member of the Jewish Faith, duly licensed by the Chief Rabbi and the London Board of Shechita as a slaughterer, when engaged in the slaughtering of cattle intended for the food of Jews according to the Jewish method of slaughtering, if no unnecessary suffering is inflicted.”

A Bye-law in almost comparable terms is operative in the City, in which district the only slaughterhouses are situate at Aldgate :—

“ 22. A person shall not in a slaughterhouse proceed to slaughter any bull, ox, cow, heifer, or calf until the same shall have been effectually stunned.



“ Provided that this requirement shall not be deemed to apply to any member of the Jewish Faith, duly licensed by the Chief Rabbi and the London Board of Shechita as a slaughterer, when engaged in the slaughtering of cattle intended for the food of Jews according to the Jewish method of slaughtering, if no unnecessary suffering is inflicted.”

There is an obvious difference between the Bye-laws which are operative to-day in the City and at Islington and Model Bye-law 9 (B). The present Bye-laws are similar to the old Model Bye-law 9 (A). The reason why the Ministry of Health introduced the alternative 9 (B) in the Model Series is stated in the quotation from the Memorandum given above.

On March 6th, 1923, the London County Council made a new Bye-law dealing with the same subject, and which is now operative. It is in the following terms:—

“ A person shall not in a slaughterhouse proceed to slaughter any animal until the same shall have been effectually stunned, and such stunning shall, except as hereinafter provided, be effected with a mechanically operated instrument suitable and sufficient for the purpose.

“ Provided that this Bye-law, so far as it would require the stunning of sheep and the use of a mechanically operated instrument, shall not apply until the expiration of three months from and after the date of the confirmation of this Bye-law.

“ Provided, further, that this Bye-law shall not be deemed to apply to any member of the Jewish Faith, duly licensed by the Chief Rabbi as a slaughterer, when engaged in slaughtering of cattle intended for the food of Jews according to the Jewish method of slaughtering, if no unnecessary suffering is inflicted.”

There are a few variations in the above from the Model Series, and these are (a) that the requirements in respect of sheep shall not apply for three months, and (b) a rider which affects the Jewish method, and which was appended to the Bye-laws in the following terms:—

“ The foregoing Bye-law, except in so far as it may apply to the slaughter of animals, without unnecessary suffering, for the food of Jews according to the Jewish method, by a person certified by the President for the time being of the London Committee of the Deputies of the British Jews as holding a licence from the Jewish ecclesiastical authorities to act as a slaughterer, is hereby allowed by the Minister of Health this 7th day of December, 1923.”

#### LEGALITY OF MODEL BYE-LAW 9 (B).

Many Local Authorities have given consideration to this subject, and some have adopted Model Bye-law 9 (B). Among these may be mentioned the Corporation of Reading, since in that town the validity of the Bye-law has been challenged. The case before the Magistrates resulted in a decision adverse to the Corporation, who appealed to the High Court. The Magistrates' decision was in the following terms:—

“ Having given this matter careful consideration, and weighed all the evidence put before us, we have come to the conclusion that the summonses against the four defendants should be dismissed. We find that the Bye-law is unreasonable, because it is partial and unequal in its operation as between different classes of the community. Further, we are of opinion that the Bye-law is unreasonable because it applies to all animals without distinction, and we find as a fact, after hearing the evidence submitted to us, that killing pigs by hoisting and sticking is not less humane than by shooting. We also find as a fact that the meat of pigs killed for bacon purposes by a mechanically operated instrument is more likely to deteriorate for curing than is the meat of pigs killed by hoisting and sticking. We also find that there is no material danger from a mechanically operated instrument, if properly used with ordinary care. In dismissing the summonses, we order the informant to pay ten guineas costs in each case.”

The Judgment of the High Court, which is quoted from the “ Times ” of June 15th, 1922, was as follows:—

“ The Lord Chief Justice, in giving Judgment, said that there was imposed upon the Corporation of Reading the statutory duty of making Bye-laws for the licensing, registration and inspection of slaughterhouses and knackers' yards, and for preventing cruelty therein. A prosecution was instituted under Bye-law 9, and in the result the Justices came to the conclusion that the Bye-law was unreasonable on various grounds, which were set out in the special case. It had been suggested that the Bye-law was bad in itself (1) because it prescribed a particular method of slaughter when various other methods were equally open to, or equally free from, objection, and (2) because on religious grounds, if that was the right expression to use, an exception had been made



in the Bye-law in reference to a particular portion of the community. In his opinion, there was no substance in either of those criticisms. Applying, as he did, the principles laid down by Lord Russell in *Kruse v. Johnson*, he could see no grounds whatever on which, so far as the law was concerned, the Bye-law was open to objection. The appeal would therefore be allowed, with costs, and the case would be remitted to the Justices, with a direction to them to convict."

The general effect of the above Judgment would appear to be to establish the Bye-law on a sound legal basis.

#### CONSIDERATIONS AFFECTING THE METHOD OF SLAUGHTERING.

The chief essential in satisfactory slaughtering is that efficient bleeding shall result. Blood is a more rapidly putrescent material than any other animal tissue, and therefore the less blood there is remaining in a carcase the better the keeping qualities of the meat. It should be remembered, however, that the complete removal of blood is impossible by any known practical means, and the unavoidable residual amount has a varying importance which bears some relationship to the temperature of the country in which the animal is slaughtered, and also to the subsequent disposal of the meat.

It is obvious that in a hot country it is more essential that there should be a more complete removal of blood than in temperate climates, and in this fact we probably have the foundation of the hygienic law which gave origin to the Jewish injunctions associated with bleeding. As regards the subsequent treatment of the flesh, it is obvious that the blood content of meat which is consumed in a fresh state is not so important a factor as when the meat is required to be submitted to a later preservative treatment, other considerations, such as temperature, being comparable. If it is preserved, as in the case of conversion of the fresh meat of the pig into bacon or hams, a greater blood content necessitates a greater care in the process. In fact, it is not difficult to recognise that the unsatisfactorily bled carcase of a pig may be totally unsuited for conversion into bacon, although the same carcase might reasonably be sold in the fresh state for immediate consumption. It will be pointed out later that one of the objections raised against a certain method of slaughter is that pigs stunned or rendered unconscious before bleeding do not bleed sufficiently well to allow the flesh being preserved in the form of bacon.

Three other considerations require to be noted in considering the suitability of any proposed method of slaughter, and they are (1) the question of inflicting unnecessary pain, (2) the length of time taken to carry out the work, and (3) the amount of damage done to portions of the carcase usually sold for human consumption.

(1) It must be obvious that in the act of slaughter an animal must undergo some physical pain. By some methods unconsciousness is so suddenly produced that it can be regarded as negligible, in others some doubt exists as to the duration of pain. The mental aspect of slaughter would appear to be generally exaggerated, for the symptoms of fear which an animal shows at the time of slaughter are probably not associated with the slaughterhouse as such, but rather with the unusual association of animal with man in an enclosed space. The ordinary instinct of self-preservation affects the animals rather than the fear of the unknown slaughtering process. Nevertheless, even this mental disturbance should be minimised, if possible, as well as the amount of physical pain inflicted on the animal. If several processes are available for slaughter, the one resulting in the least physical pain and mental distress should be adopted, provided equally satisfactory or practically negligible differential results can be attained.

(2) As regards time. It is easy to recognise that if a proposed method of slaughter results either in requiring more men to carry it out as a consequence of additional labour being thrown on to the slaughterman, or if it necessitates an appreciably lengthened time in which to slaughter and dress an animal, that such a process will not be received with favour, and it would require to be proved that the advantages to the animal by the adoption of such process were such as to justify it, notwithstanding the resulting loss to the trader.

(3) As regards damage to edible portions, this arises in respect of the brain in calves, the skin over the face in pigs, and the condition known as "splashing" in the same animals. These matters are referred to later in other sections of the Report.

#### METHODS OF SLAUGHTER.

The essential of slaughter is, as already stated, efficient bleeding, and in all cases bleeding is effected by throat-cutting, but the cutting of the throat is associated with other requirements, and these may be tabulated as follows:—

1. The Jewish method, without preliminary stunning.
2. The non-Jewish method, without preliminary stunning.



3. Preliminary stunning by (*a*) the hammer, mallet or maul, or (*b*) the pole-axe.
4. The production of unconsciousness by some form of mechanically operated instrument.

As ancillary aids to the more efficient execution of one or other of the above processes, devices are used for tethering, casting, restraining, or even hoisting animals prior to stunning or sticking.

It is desirable that the above processes should be briefly considered separately :—

#### 1. THE JEWISH METHOD, WITHOUT PRELIMINARY STUNNING.

The slaying of an animal for food is a religious rite of the Jews. The officer appointed is specially trained, examined and certified, and he works with the permission and under the supervision of the Board of Shechita. The official performing the rite is termed the Shochet. He uses a knife of exquisite perfection. As such it must have a perfect edge, without the least perceptible unevenness, indentation or roughness. The knife must be more than twice as long as the breadth of the neck of the animals, that is, 14 finger breadths for large cattle. Smaller knives are used for birds and small cattle. The method of killing cuts through the trachea, the œsophagus, the carotid arteries and the jugular veins with one continuous movement. Five points require to be observed in correct ritual slaughter : (*a*) Shechiya—there must be no pause, the object being to obviate protracted pain; (*b*) Derasa—there must be no pressing upward or downward or any hacking; (*c*) Shalada—there must be no burrowing, therefore the knife must not be introduced under the skin; (*d*) Hagrama—the incision must be in a prescribed region of the neck, and that appears to be where there would be least resistance to the knife to the greatest probability of early section of the vital arteries; (*e*) Ikkur—there must be no laceration, but a clean-cut incision.

The above five points are referred to in detail, because they are useful as a basis of comparison with the method of throat-cutting by non-Jewish slaughtermen. The details are taken from an Address on the Jewish methods of slaughtering animals for food, by the Rev. Dr. M. Hyamson. The flesh of animals which does not comply with the requirements is termed Terefah.

To perform an incision under the conditions set out above it is obviously necessary that the animal should be fixed, and in this country animals for Jewish slaughter are cast by non-Jewish slaughtermen. In a pamphlet published by the Board of Deputies of British Jews it is stated that casting is not an essential of the Jewish method. The casting and the fixing of the head, however, are the parts of the process which have been submitted to the most severe criticism by non-Jewish observers, and it is difficult to appreciate how the ritual could be followed out without some sort of fixation. It has been suggested that bruising and pain must follow this method of casting, but observations on 33 cases by two selected observers resulted in their reporting that “in no single case was such a bruise found.”

We rather imagine that some recognition of the soundness of the criticism exists, for the Board of Shechita is still interested in any method which will enable fixation to be obtained in a less objectionable manner.

Apart from the casting, it has been suggested also that the subsequent struggles of the animal which are observed after the Shochet has cut the throat are evidence of pain. Professor Leonard Hill and Mr. Openshaw, C.M.G., F.R.C.S., of the London Hospital, and others assert that unconsciousness results very quickly on the section of the carotid arteries, owing to the deprivation of the brain of blood. Others, and of these Mr. Linton, M.R.C.V.S., throw doubts on this contention, and Mr. Linton points out that the brain continues to receive blood by way of the cerebro-spinal arteries, which though not large in amount must still be an appreciable amount. He further states that “having witnessed the throat-cutting of a large number of sheep, I have no hesitation in stating that the animal felt the cut and struggled at the time.” In any event, whatever may be the effect, there is very little doubt that the Jewish method of throat-cutting is very well done, and unconsciousness does rapidly supervene. Whatever difference of opinion there may be in respect of the above matters, there is none to the opinion that the carcase of an animal killed by the Jewish method will compare favourably, and generally to the advantage of the animal so slaughtered, with that of an animal killed by any other method. It ensures the most complete clearance of the blood possible, since the vital centres in the brain are left intact, the heart continues to beat, and the muscles to contract, all of which assist in the clearing out of the small blood vessels.

Even if we were to accept it as a fact that the Jewish method of slaughter does invariably result in the removal of more blood from the carcase than results from any other method, if is necessary to consider whether, if the other method has an advantage from other points of view, particularly that of cruelty, this advantage is not sufficient to justify its adoption in a country with only moderate temperatures.



Without offering any opinion as to whether the process of casting is cruel or otherwise, the following description of the two methods adopted in this country is submitted:—

A rope or chain is placed round the neck of the animal to be slaughtered, and by this it is forced into the slaughterhouse. The actual casting is thus effected—

(a) A chain for hoisting the carcase is attached to one hind-leg of the animal; this is raised until the animal loses its balance and falls over on to one shoulder. The head of the animal is then pulled backwards, in order to render the skin and muscles of the throat tense. The Shochet then proceeds to make the incision; or

(b) The animal has tackle (ropes and chain and pulley) attached to its legs over the feet. The tackle is rapidly pulled by men, and the animal falls on to its side. The throat is again rendered tense, and the Shochet divides the tissues. At Islington a mat is laid down on the floor on which the animal falls, the object being to avoid the breaking of the horns and the bruising of the flesh.

## 2.—THE NON-JEWISH METHOD OF SLAUGHTER, WITHOUT PRELIMINARY STUNNING.

The animals slaughtered by this method are pigs and sheep.

(a) PIGS are often stuck by the small butcher or cottager without preliminary stunning, and this is also the practice in certain large bacon-curing establishments. In these latter places pigs have a chain attached to one hind-leg, and one end of the chain is then attached to a revolving machine which is constantly in motion. By this means the pig is hoisted off the ground and conveyed to a place where it is bled by means of an incision in the throat which cuts the large blood vessels. There is no preliminary stunning.

This method is in operation in a large number of bacon factories in Denmark, Canada, U.S.A., South Africa, Great Britain and Ireland. Bacon manufacturers assert that this method gives them the best carcase, and some even suggest that the wastage which would follow other methods is so considerable as to render the business unprofitable and the product of uncertain quality. It is also held that the process enables greater speed of slaughtering, and therefore cheaper food results. Proof is necessary to support both these contentions. The latter one is probably true, but is it to the extent of materially affecting prices?

No facilities exist in the City or at Islington for making experiments as to whether bacon can be prepared satisfactorily only from pigs slaughtered without preliminary stunning, since all pigs slaughtered within the area of the Corporation's responsibilities are consumed as fresh pork. Further reference will be made to this subject in a later section.

(b) SHEEP.—The difference between the Jewish and the non-Jewish method of slaughter of sheep is not considerable. Care taken both in regard to the implement used and the method of making the incision in the throat are the main points. In the former method the same ritual is necessary for sheep as for cattle. In the non-Jewish method the sheep is placed on a crutch, and a sharp-pointed knife is plunged through the throat from side to side. The large blood vessels are cut and the head pressed back with a quick jerk, so that the spinal vertebræ are disarticulated and the spinal cord ruptured. Some slaughtermen insert the point of the knife between the bones of the cervical vertebræ and cut the spinal cord. In some slaughterhouses animals are left on the ground, and no crutch is used.

Probably, in considering the Jewish and the non-Jewish methods of slaughtering sheep, the advantage is slightly in favour of the Jewish method, owing to the particular care which is displayed in the process, the simplicity of the method and the high quality of the knife used.

The argument advanced in favour of not stunning sheep is that of business expediency. It is asserted, and probably correctly, that more sheep can be dressed in a given time without preliminary stunning. It does not appear that much attention is paid to the other advantages or objections in sheep so killed and those stunned with a mechanically operated instrument or otherwise.

## 3.—PRELIMINARY STUNNING.

(a) BY THE HAMMER, MALLET, OR MAUL.—In the slaughter of small animals, such as small pigs, and in some instances sheep and usually calves, the hammer, mallet, or maul is used to produce unconsciousness. It is probable that very few would claim that this preliminary stunning results in any disadvantage being observed in the carcase. The main objection to its use is the uncertainty of action. At one demonstration we saw a large pig struck five times



with a hammer before unconsciousness resulted, and we relate a somewhat similar experience in our own work in a subsequent paragraph. As a rule, large boars or sows and those pigs killed for bacon curing which are not killed by the mechanical apparatus already described are rendered unconscious by means of the pole-axe.

(b) BY THE POLE-AXE.—This is the general method of rendering large animals unconscious. The pole-axe consists of a heavy hammer, made up of a long handle at the end of which is an iron cylinder about four inches long set at right angles to the end. This is used to stun an animal by delivering a blow on the selected place on the forehead. The hollow end of the axe perforates the skull, and the animal is rendered unconscious. It is usual for a cane to be inserted in the hole made, which disorganises the posterior cerebral contents.

The certainty of stunning by the use of the pole-axe must obviously depend upon the skill of the operator, but even with the most skilled man failure to stun at the first attempt must be recorded, and the probability of failure varies not only with the operator's skill, but with the type of animal to be struck. The skulls of old animals are very dense, and the skulls of different types vary, *e.g.*, the polled angus and a cross-breed without horns; whilst also greater accuracy is necessary to ensure that the blow is struck on the proper place and with the maximum mechanical advantage. Defective judgment of the striker, slight movements of the head of the animal, variations in the force of the striker, which occur owing to cramped position or slipping, are all factors which contribute to failure.

This uncertainty of result may be regarded as the greatest objection to the use of the pole-axe, for bleeding is good, and as the method is one which up to the present has been in general use, it is evidently satisfactory from the point of view of keeping-qualities of the carcase, as no complaints on this account have to be recorded.

Theoretically, the extent of the unreliability of the method has been under observation by us in over 900 instances. In these observations it should be placed on record that in no instance was either carelessness or apathy observed, and in all the operator was a skilled man working under reasonable conditions. In the case of bulls, without division into young or old, it was found that 100 bulls required on an average 250 blows to produce unconsciousness; in the case of 100 oxen, 123 blows; of 100 cows, 127 blows; and in the case of 100 pigs, 155 blows. These figures are, of course, the percentage totals based on the total observations, and have formed the fundamental basis for comparing the certainty of the production of unconsciousness by the pole-axe with that resulting from the use of an apparatus which will be described later.

#### 4.—THE PRODUCTION OF UNCONSCIOUSNESS BY MEANS OF MECHANICALLY OPERATED INSTRUMENTS.

Mechanically operated instruments are frequently used for producing unconsciousness in animals about to be slaughtered. Such instruments are fitted with a mechanism whereby a bullet or a captive-bolt is forced through the bony structures of the head in the same region which the slaughterman seeks to hit when using a pole-axe. The propulsion of the bullet is effected by means of an explosive cartridge, and of the bolt either by a direct blow, the release of a spring, the release of compressed air, or by firing a cartridge. The apparatus is applied to the skull either by using a mask or by directly placing the nozzle of the instrument against the bone. The gun is held in the hand of the operator or placed at the end of a shaft, in which case the operator holds the shaft and is thereby able to stand a safe distance from the animal, and at an angle of 90°. The instrument is fired by means of a trigger, and in those instruments fitted with a shaft this is placed at the end, where it can easily be released by the operator.

Such observations as we have made have been done with two instruments of the bolt-propelling type, namely, the Cash Pistol and the Temple Cox apparatus. These instruments were selected for the purposes of this Report because of the danger which those of us (J. R. H. and T. D. Y.) who have had experience in the subject consider results from the use of pistols releasing a free bullet, and also because we consider the bolt-propelling type more nearly approximates the method of slaughter mostly in vogue, namely, the pole-axe. Illustrations of these two instruments are set out in the Appendix.

The Cash Pistol was used, between March 20th and May 14th, on 190 animals. To render these animals unconscious 194 shots were necessary. The tabulation is as follows:—

| <i>Class of Animal.</i> |   |   |   |   | <i>Number killed.</i> | <i>Shots required.</i> |
|-------------------------|---|---|---|---|-----------------------|------------------------|
| Bulls                   | - | - | - | - | 10                    | 10                     |
| Steers                  | - | - | - | - | 64                    | 64                     |
| Cows                    | - | - | - | - | 8                     | 8                      |
| Boars                   | - | - | - | - | 3                     | 5                      |
| Sows                    | - | - | - | - | 30                    | 32                     |
| Pigs                    | - | - | - | - | 59                    | 59                     |
| Sheep                   | - | - | - | - | 16                    | 16                     |
| Total                   | - | - | - | - | 190                   | 194                    |



It will be noticed that, in the case of boars and sows, in certain instances the animal was not felled by one shot. On March 26th a boar was shot three times without success. It was then pole-axed three times with no decisive result, and unconsciousness was ultimately produced by the use of a maul, after which it was pole-axed and the cane used. On the same date a large sow was shot twice without producing unconsciousness, and the animal was finally dispatched with the second stroke of the pole-axe. On May 5th a similar set of circumstances has to be reported. A sow was shot twice without decisive result, and was afterwards killed by the second stroke of the pole-axe. In all these instances the animals were of the Middle White breed, which show a thick cushion of subcutaneous tissue in the frontal area, and neither the bolt nor the end of the pole-axe was sufficiently long to pierce the tissue and penetrate the skull.

The obvious recommendation was that the pistol should be lengthened, so as to enable a longer bolt to be used. Only a few experiments were subsequently carried out with this pistol, and these were quite satisfactory.

At this point the Temple-Cox Pistol came under our observation, and a preliminary examination led us to the conclusion that the bolt in this case was too short also, and would result in difficulty in the type of pig referred to above. The bolt was therefore lengthened before observations were made, and a special cartridge was prepared in accordance with our recommendation.

The following Table sets out the cases in which the Temple-Cox Pistol was used between five specified dates:—

| Number of Animals rendered unconscious by the use of the Temple-Cox Pistol. |                              |                    |                              |                    |                              |                    |                              |                    | Totals<br>Temple-Cox Pistol. |                    |
|---|------------------------------|--------------------|------------------------------|--------------------|------------------------------|--------------------|------------------------------|--------------------|------------------------------|--------------------|
| Class<br>of<br>Animal.  | May 15th to July 13th        |                    | July 22nd to Aug. 27th       |                    | Aug. 21st to Sept. 7th       |                    | Sept. 9th to Sept. 25th      |                    | May 15th to Sept. 25th       |                    |
|   | No. of<br>Animals<br>killed. | Shots<br>required. | No. of<br>Animals<br>killed. | Shots<br>required. | No. of<br>Animals<br>killed. | Shots<br>required. | No. of<br>Animals<br>killed. | Shots<br>required. | No. of<br>Animals<br>killed. | Shots<br>required. |
| Bulls ..  | 9                            | 10                 | 12                           | 12                 | —                            | —                  | 3                            | 3                  | 24                           | 25                 |
| Steers ..   | 40                           | 40                 | 158                          | 158                | 119                          | 119                | 140                          | 140                | 457                          | 457                |
| Cows ..   | 4                            | 4                  | 20                           | 20                 | 19                           | 19                 | 18                           | 18                 | 61                           | 61                 |
| Boars ..  | 8                            | 8                  | 14                           | 14                 | 2                            | 2                  | 18                           | 18                 | 42                           | 42                 |
| Sows ..   | 76                           | 77                 | 23                           | 23                 | 28                           | 28                 | 88                           | 88                 | 215                          | 216                |
| Pigs ..   | 90                           | 90                 | 97                           | 99                 | 121                          | 121                | 147                          | 147                | 455                          | 457                |
| Horses ..   | —                            | —                  | 1                            | 1                  | —                            | —                  | —                            | —                  | 1                            | 1                  |
| Totals  | 227                          | 229                | 325                          | 327                | 289                          | 289                | 414                          | 414                | 1,255                        | 1,259              |

In the first group, May 15th to July 13th, two failures have to be recorded. In one instance, that of a bull, the cartridge was defective, and in the other the animal, a pig, moved its head just at the moment of firing, with the result that the shot was unsatisfactory.

On July 22nd the Temple-Cox Company placed two pistols and a supply of cartridges at our disposal; one of the pistols had the wooden-handle attachment. From that date to August 7th both pistols were in constant use, and slaughtermen whose duty it is to kill animals at the abattoirs have been given an opportunity to use the gun. They have done so willingly, and have expressed satisfaction with the results obtained. In that period there were two failures, both in connection with pigs. In one instance the cartridge seemed to be faulty, as no explosion resulted when the trigger was pulled, and in the other the pig moved its head sharply just as the bolt was fired.

After 327 shots had been fired the bolt in the instrument with the arm attached—which had been used in nearly all cases—became wedged, and could not be adjusted for use. The Company exchanged the barrel for a new one, and we were informed that the cartridges which had been used were of the strongest kind, and had caused the wad in the barrel to be disintegrated by continuous concussion.



On August 21st an instrument which had been modified to meet the above contingency and fitted with a longer new barrel and bolt was sent to us. The length of this bolt was  $3\frac{5}{8}$  inch—the bolt used previously was  $2\frac{3}{4}$  inch. The same strength of cartridge was used. From August 21st to September 7th, 289 animals were killed with this instrument, and no failure at the first shot has to be recorded.

On September 7th the bolt again became fixed, and was returned to the makers. On September 9th the barrel was replaced, and this instrument has been in use between that date and September 25th. The animals slaughtered in that period numbered 414, the first shot in each instance being successful. At the time of writing this Report the gun was still in use.

The summary of the use of the instrument shows that 1,255 animals were rendered unconscious by it, and that 1,259 shots were required. The small number of four second shots in over a thousand uses compares more than favourably with the results from the pole-axe, the figures in this latter instance, as already mentioned, being 249 blows to render 100 bulls unconscious; for 100 steers, 123 blows; for 100 cows, 127 blows; and for 100 sows and boars, 155 blows.

Other considerations being equal, this demonstration is sufficient to prove that an efficient mechanically operated instrument is a more reliable method of producing unconsciousness than the pole-axe, even when the latter is used by the most skilled slaughterman.

In this Report it is perhaps not necessary to refer in detail to the different kinds of apparatus which can be used to assist the act of slaughter, whether by pole-axe or if some mechanically operated instrument is used, but these include the Van Dorp Pig Trap for pigs, which we have seen used in Holland; the Medcalf Stunning Pen, which we have seen used in this country; the Box method, used in South and North America; and the Weinberg Patent Apparatus, designed to assist the Jewish method of slaughter. If they are useful to assist in slaughter by the pole-axe they are equally useful for other methods of stunning.

#### CONDITION OF MEAT AFTER SLAUGHTER.

We have carefully examined the meat of the above animals in the carcase form, and we desire to state emphatically that no exception can be taken to the efficiency of the bleeding. The meat was sold at Smithfield Market, and no complaints were made or received. We are even of the opinion that it would have been impracticable to have selected, otherwise than by chance, the carcasses of those animals slaughtered after preliminary unconsciousness had been effected by mechanical means from those rendered unconscious by other means.

Various experiments have been made to prove that the blood-content is greater after shooting than after slaughter by the Jewish method. Professor Leonard Hill and Mr. G. W. Dunkin have issued a clinical report in the "Veterinary Record" on this subject, and claim that the advantage is with the latter. Professor Gerald Leighton examined the blood-content of the muscles from 16 bullocks, half of which were pole-axed and the other half shot, but he failed to find any difference.

We are satisfied that, where meat is to be sold in the fresh state, bleeding after the use of the instruments above mentioned is perfectly satisfactory.

It is stated, however, that the bleeding is not sufficiently good to enable pig carcasses to be converted into bacon. In view of the fact that all carcasses slaughtered at Islington are sold as fresh pork, we have been unable to consider this aspect of the case, and we must be content by stating that we are not prepared to accept such a contention without definite proof, and if your Committees require information on this subject we respectfully request permission to incur the necessary expenditure, as special arrangements would require to be made.

#### TRADE EXPEDIENCY.

**CATTLE.**—We cannot conceive any objection which can be taken to the use of the instrument as opposed to pole-axing, on the ground either of waste of time or damage to the carcase.

**SHEEP.**—Some exception is taken to the use of the instrument by butchers who have a large number of sheep to slaughter daily, owing to the increased time which is stated to be necessary. Sheep when caught jump about, and it is very difficult to hold the animal with one hand and the pistol with the other. Even when the animal has been shot, the pistol has to be placed on one side and the carcase lifted on to the crutch in order to bleed it. This involves heavy labour on the part of the slaughterman, as must be obvious to anyone who has seen the difference in the labour necessary to lift a dead sheep compared with a living sheep. Where



100 sheep are killed daily this would appear to be a consideration, as it might require a relief man. The difficulty, however, might be overcome by fixing a holster on the side of the crutch, in which the pistol could be placed after it is loaded. The sheep may then be caught and placed on the crutch in the usual position, and the head drawn back as for bleeding. The pistol can then be taken from the holster, fired into the head of the animal and returned to the holster. The slaughterman would then proceed to take his knife and bleed.

#### DAMAGE TO THE CARCASE.

As regards damage to carcase, none has to be reported.

**CALVES.**—The only point of interest was to observe whether the brain would be damaged by the use of the bolt. It should be remembered that calves are usually stunned and then bled. The limited investigation which we have made would lead us to believe that no damage of any consequence would result from the use of the bolt.

**PIGS.**—In addition to the criticism as to the insufficient bleeding in the case of bacon pigs, which is referred to above, three other objections are submitted in the case of pigs :—

1. Where large numbers have to be slaughtered the hoisting method and slaughter without preliminary stunning is stated to save time, but in our opinion the difference would not be considerable, and other stronger objections would have to be found to justify the rejection of slaughter by the use of a mechanical instrument.

2. The skin and tissues in the neighbourhood of the bolt are stained, but again this seems to us to be of little importance.

3. What is known as “splashing” is stated to occur with a frequency which is serious. Splashing is a hæmorrhagic condition in which spots of blood are found in certain parts of the carcase, not as a consequence of disease, but probably associated with the method of slaughter. Punctate, or even larger hæmorrhages in the muscular tissue of the diaphragmatic and abdominal muscles, are seen in the carcasses of animals which were obviously healthy. These appear to be due to the laceration of the muscular elements and capillaries by the muscular contractions which follow stunning, particularly when several are stunned at a time and some little interval elapses before the animals are bled. The condition is objectionable, if extensive, since the number of hæmorrhagic points renders the flesh unsightly, and may encourage premature decomposition.

If the suggested origin is as thus stated, we should expect to find hæmorrhages more frequently in animals which showed considerable tetanic action after unconsciousness, and the longer and stronger was this state of tetanus the greater probability would there be of splashing. We desire to record the fact that in not one of the pigs slaughtered under our supervision was splashing in the slightest degree observed, neither was tetanic action, particularly in pigs, so pronounced that throat-cutting was not practicable immediately after the shot was fired. It is of interest to record the fact that we observed tetanic action was less pronounced when the heavier charge in the cartridge was used, and we are justified in stating that, although splashing may occur in pigs rendered unconscious by the captive-bolt type of pistol, its frequency is so small as not to be an objection.

**HORSES.**—A mechanically operated instrument is invariably used in the case of horses slaughtered at Islington, and gives satisfaction.

#### RECOMMENDATIONS.

We have given careful consideration to the subject of the slaughter of animals and made such observations as the facilities at our disposal rendered possible, and we beg to recommend as follows :—

1. That Bye-law 9 (B) be adopted by the Corporation, and that it should apply to :—

- (a) Cattle, including calves;

- (b) Horses;

- (c) Pigs, the flesh of which is to be consumed as fresh pork.

2. **SHEEP.**—We are unable to agree as to a recommendation in the case of sheep, and submit a rider herewith.

3. We recommend that further enquiries and experiment be made in respect of the objections which others have submitted to the effect that the use of the mechanical apparatus prejudicially affects the preparation of bacon, if additional information is desired on this subject. We estimate that the cost of such enquiry would not exceed £150.



4. If Bye-law 9 (B) is adopted, we recommend that the use of a mechanically operated instrument of the captive-bolt type be specified, to the exclusion of one releasing a bullet.

5. If Bye-law 9 (B) is made compulsory, we consider that classes of instruction should be established for the purpose of educating slaughtermen in (a) simple anatomy of the skull of different animals, and (b) in the proper use and care of the instrument.

6. If it be practicable, after Bye-law 9 (B) is adopted, we would suggest that no persons should be permitted to slaughter in any slaughterhouse within the jurisdiction of the City Corporation until certified by one of your officials as having a competent knowledge of (a) and (b) above.

All the above we beg to submit for the consideration of your Worshipful Committees.

Your obedient Servants,

WILLIAM J. HOWARTH,

*Medical Officer of Health of the  
City of London.*

JAMES R. HAYHURST,

*Superintendent and Chief Veterinary  
Inspector of the Metropolitan Cattle  
Market.*

T. D. YOUNG,

*Veterinary Surgeon, Corporation of  
London.*

#### RIDER RELATING TO THE RECOMMENDATION IN RESPECT OF SHEEP.

By THE SUPERINTENDENT OF THE CATTLE MARKET AND THE VETERINARY SURGEON.

We consider—

- (a) That there is practically no difference between the Jewish and the non-Jewish method of slaughtering sheep, from a humane point of view;
- and
- (b) That the difficulties attending the catching, holding effectually to shoot, and general handling of sheep in the use of a mechanically operated instrument by one man, associated with the fact that the rapid cut of the large blood vessels in the present method of slaughter causes as instantaneous unconsciousness as the entry of the bolt into the brain.

We recommend that "sheep" should be excluded from Bye-law 9 (B).

JAMES R. HAYHURST.

T. D. YOUNG.

By THE MEDICAL OFFICER OF HEALTH.

I cannot accept the contention that the slight disadvantage to the trade which would result from the use of the mechanical killer is a sufficient reason to justify the slaughtering of sheep to be performed without preliminary stunning. The suggestion appears to be inconsistent with other of the recommendations, and I therefore submit:—

SHEEP.—That Model Bye-law 9 (B) be made operative in respect of the slaughter of sheep.

WILLIAM J. HOWARTH.









